were as dear as a brick drain of that diameter, and the 15 inches dearer.

At the close of the paper, the Dean of Westminster demurred strongly as to the innocious nature of the gases in sewers: from what the healthy and the strong might derive no harm the weak would suffer. Within the few last days a medical friend of his, passing over one of these gratings, had taken matter into his system which laid him on a sick bed.

Mr. C. Fowler referred to the sewerage of Hambugh laid down by Mr. W. Lindley, which passes under the river by means of a dip, which is cleansed by a great head of water. The sewer there is egg-formed.

Mr. James Fergusson maintained that the gases evolved from decomposing animal matter were not so injurious as those from vegetable matter.*

Mr. Donaldson said the form of sewers had been modified through a variety of causes. In the first instance they were merely for the passage of water, and any form sufficed. Afterwards, when solid matter was permitted to pass into them, greater attention to their arrangement became necessary. Within a few years the use of macadamized roads, from which an immense quantity of heavy grit was taken into the sewers, had rendered further alteration in form requisite. He was of opinion that more evil resulted from the badness of our house-drains than from the sewers. The gases from sewers were doubtless bad, although he himself had passed through miles of sewers, and had never suffered from them. How were these to be carried off? If the street gratings were trapped, more vapours would go into the houses. Bricklayers were so culpably careless, that drains were seldom air-tight or perfectly trapped. As to using the chimney-shafts of brewers and manufactories, it was scarcely to be expected that private individuals would suffer this; and if we had shafts and fires expressly for the purpose, the expense and inconvenience would be great. He thought precautions might be carried to extremes, and cause a dangerous frenzy. It had been long desired by late commissions to obtain perfect drainage, but the public would not then co-operate. More water was needed; without this, cesspools could not be prevented. Government should bring two or three rivers of water into London for the poor, the streets, and the sewers. By comparison with ancient Rome in this respect, London suffered materially.

Mr. Tite was unwilling that we should depart from our principle of self-reliance, and led to depend on Government. The great cost of sewers had been a bar to their extension: the opinion now entertained seemed to be that public sewers should be built at public expense. It was very desirable that sewers should be ventilated: the only practical suggestion he had heard was one by the Dean of Westminster in that room, some time ago, namely, that it should be effected in connection with the gas-lights of the metropolis.† Bad smells in our houses often proceeded from destruction of the traps by rats. As to the recent changes, it was well known that new brooms sweep clean, and he hoped this would be the case with the new commissioners.

The Dean of Westminster said he would venture to ask whether the appointment of an inspector of stench-traps would be objectionable? In reply to which, the interference was objected to by several speakers, except in the case of public lodging-houses.

THE INSTITUTE OF FINE ARTS.—On Saturday evening the Institute of Fine Arts held their first conversazione, at their rooms in Great Marlborough-street, and provided a rich treat for their visitors,—the walls and tables being covered with works of art. We are glad to find that unanimity has been restored here, and that the Institute bids fair to flourish.

* Not long ago we heard it gravely maintained by three medical men, at a dinner table, that the evil supposed to result from the decomposing bodies of our heaped-up dead in crowded towns was a farce: and, in reply to quoted cases of men struck dead as by lightning on breaking into a grave, that the fatal gases which escaped were rarefied from the decomposing coffin wood rather than from the body!!

† Professor Hunting, in an appendix to his work on the "Regulations of Bethlehem," quoted last week, wherein he questions the prudence of interrupting at this moment to remove the soil from the sewers, as recommended by the Sanitary Commissioners, discusses the question of ventilating the sewers.

WHAT SHOULD A SANITARY BILL CONTAIN?

SIR,—I come now to speak of the seventh head in my list of requirements given last week, namely, the *establishment of cemeteries*. An enactment providing for this pressing want would of course be rendered absolutely necessary by the previous provision. Hitherto most of the cemeteries that have been established have been the speculations of joint-stock companies, just as railways are; but this system should at once be put an end to, and the interests of the shareholders in the existing cemeteries purchased, and others formed in suitable localities, the extent of which should of course depend on the number of the inhabitants present and reasonably prospective. It will not do any longer to depend upon voluntary exertion for the formation of public cemeteries, as joint-stock companies can only be expected to embark their capital where it is likely to pay well, whereas cemeteries are required everywhere; and it is not well for the public to commit itself on such an important and really and literally "grave" subject, to a body of £. s. d. speculators, however excellent their first intentions may have been. Wherever cemeteries are formed it would be well to purchase a considerable space of land all round the cemetery, which might be let for grazing or other farming purposes, and this would prevent any buildings being erected in its immediate vicinity, and also provide for its extension, if necessary. Another point to be attended to is the keeping at a sufficient distance from the city, town, or village.

Eighth.—Establishment of Public Baths and Washhouses.—That a compulsory provision of this sort is requisite is fully evidenced by the complete failure of the "Act" empowering and allowing public corporations and parishes to erect baths and washhouses, and also of the "Act" allowing the formation of public museums, which is, in fact, almost a dead letter. As there are now several establishments of this kind in full working, and as they have more than answered the expectations of their founders in all respects, and particularly as a profitable return is realised by them (which would of course, if they were generally adopted, very much reduce the rates), I do not think I need urge any thing more in their favour.

Ninth.—Establishment of Public Necessaries for both Sexes.—In this country, at least, this important subject has been almost entirely neglected by those in authority, with the exception of one body of men,—a body, or rather bodies, whom it has been very fashionable of late (and certainly in some respects with good reason) to impugn in every possible way;—I allude to the "railway directors," who, whatever their faults, certainly deserve credit, and copying too, as regards their provision of "public necessaries for both sexes" at almost every station on every well-regulated line.

I would have a provision inserted in the Act requiring the formation of public necessaries for both sexes, in suitable unobtrusive situations in the neighbourhood of every principal thoroughfare, and the appointment of male and female servants respectively to keep them in proper order.

Tenth.—Regulation of Noxious and Dangerous Businesses.—There are some provisions in the "Metropolitan Buildings Act" under this head which, in the next, and I hope final (for many years to come), edition of that "unsanitary statute" might be omitted, as also the provisions regulating the size of drains and flues, &c. &c.

Among much that is bad, however, I am happy to say there is some good in the "Buildings Act." I refer to what I consider a very necessary provision in a sanitary view (as well as a preservative against fire); it is the clause in the aforesaid "Act" requiring houses hereafter built to have yards of a certain size; and I have not proposed its insertion in the Sanitary Act because it is already in force in the Metropolitan Buildings Act, and because I expect that Act, when thoroughly revised, will be applied to every other large town in the kingdom.

To return to the tenth subject: it is one that requires very great judgment and delicacy in the handling, otherwise it is likely to do great injury without effecting much good. There are many businesses which must be carried on somewhere, and perhaps I may say that is the case with all; therefore it would be well to enact that a suitable locality should be selected away, but not far from, every large town, where such noxious businesses might be carried on, under certain restrictions and inspection, and so that the workmen employed might live away from the spot:—a short line of railway, for instance, might enable them to do this.

As regards the metropolis, I think the Isle of Dogs, Poplar (which already contains a great many chemical works) presents a suitable locality, which might be set apart for these noxious businesses; and a branch rail, direct to the Eastern Counties line, would enable the workmen to occupy a village, or villages, such as the "Suburban Village Society" propose to form. Dangerous businesses should not be permitted to be carried on in the metropolis or any other city, and should only be allowed at a certain distance from it.

Eleventh.—Establishment and Management of Fire-escapes and Fire-engines, and other Means for the Extinction of Fire.—If my memory does not deceive me, a promise was given by Sir Robert Peel, when in power, for the entire revision of the means at present available for the above objects; but nothing came of it, except, perhaps, a few inquiries into the mode adopted in Paris, which is said to be very efficient; but whether it is so or not I am not personally aware. At present, the only effective fire-escapes in the metropolis are supplied by the voluntary subscriptions of some humane individuals, and even these are very few in number. However, they have been found to answer the purpose very well, therefore I propose their general adoption: the expense, of course, to be paid out of the rates. Another very simple but useful expedient as a fire-escape is a square piece of strong canvas or tarpauling, and which, if held out by the four corners, would break the fall of any one jumping from the window of a house, and thus be the means of saving many lives. In order to render this plan available, it would simply be necessary to deposit a tarpauling in various parts of the metropolis (perhaps at the station-houses), in the custody of the policemen or of the fire-escape attendants, and it would then be ready for use at any time. I have previously stated that I would have the water from the Thames laid on by pipes, which should be always kept charged (of course under a sufficient pressure to raise the water to any required height), so that it would be merely necessary to attach the hose to the plugs in order to obtain a powerful stream or streams of water, which would, of course, entirely abolish the ordinary hand fire-engines, and it would only be necessary to have active officers stationed in all parts of the metropolis, in order to bring this plan into operation. But the warehouses and manufactories on the banks of that "great highway," the Thames, would still be unprovided for in this respect; therefore I propose stationing a number of floating fire-engines at regular distances along the Thames. These should be fitted up with powerful steam-engines, which should be applied as in the ordinary steamboats, to the moving of the vessels to any part or parts of the river where they might be required, and also by altering the gear to the pumping of the water from the river in the required direction. It would, of course, be advisable to keep the steam always up, so that these vessels should be ready for action at the shortest notice; and they might be occasionally employed in the day time in washing the bridges, or other buildings, in the neighbourhood of the river.

It has been suggested in THE BUILDER to bring the electric telegraph into operation for the prevention of fires; and perhaps it might be as well to have connections by means of the telegraph between appointed stations on both sides of the river, and these floating fire-engines; and each of the engines might have communications with each other in the same way.

Twelfth.—The Obligation to Consume the Smoke produced in Manufactories and River Steamers, or, in the case of the latter, to Burn Coke.—This is a point which I sincerely hope will not be overlooked by the framers of the next "Sanitary Act," and especially as regards the river steamers, which ought to be obliged to burn coke, like the railway locomotives. As it has now been proved that the smoke of

* See p. 567, ante.

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